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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,474	01/29/2004	Steven T. Fink	071469-0307596 (PC0155A)	3726
7590 Andrej Mitrovic Suite 10 4350 W. Chandler Blvd. Chandler, AZ 85226			EXAMINER CHEN, BRET P	
			ART UNIT 1792	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/766,474	<b>Applicant(s)</b> FINK, STEVEN T.	
	<b>Examiner</b> Bret Chen	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-9 and 11-31 is/are pending in the application.
- 4a) Of the above claim(s) 13-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9,11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1-2, 5-9, 11-31 are pending in this application. Amended claim 1 is noted.

The amendment dated 1/29/09 has been entered and carefully considered. The examiner appreciates the amendments to the abstract and claims. In view of said amendment, the objection to the abstract and the previous art rejection have been withdrawn.

Claims 13-31 have been withdrawn from consideration as being directed to a nonelected invention.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 1-2, 5-9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al (2002/0005252) in view of Williams et al (5,647,953), and further in view of Wong et al (5,522,932) and Wirz et al. (4,895,631).**

Masuda teaches a method for manufacturing a substrate with a plasma processing system, the method comprising: disposing a substrate on a chuck in a first plasma processing chamber; and forming a first plasma in a processing region within the first plasma processing chamber (see Paragraph [0057] of Masuda). Masuda does not teach the steps of the method comprising: obtaining a component of a plasma processing system which has been coated with a film of material; disposing said component in a first plasma processing chamber; wherein the film of material has been coated using a second plasma in a second plasma processing chamber different from said first plasma processing chamber.

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However, Masuda does teach that it is advantageous to perform an in situ pre-seasoning/pre-coating process to prevent corrosion of the interior surface of the apparatus from the plasma etchants before the substrate processing (Paragraph 0032). Williams teaches a method wherein the film of pre-seasoning/pre-coating material has been coated using a plasma, and wherein the chemistries of the plasmas used for deposition of the pre-seasoning/pre-coating film and for processing of the substrate are substantially the same wherein  $\text{SiO}_x$  plasma coatings are used for both the substrate coating and the pre-seasoning coating (col 5, lines 55-67, and col.6 lines 1-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the present invention to have modified the method taught by Masuda by coating the film of pre-seasoning/pre-coating material using a plasma because Williams teaches that such methods are known in the art.

Furthermore, Wong teaches the method comprising obtaining a component of a plasma processing system which has been coated with a film of material and disposing said component in a first plasma processing chamber (see Column 6, lines 19 – 33). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the method taught by Masuda in view of Williams by plasma coating the plasma processing apparatus parts in a second plasma processing chamber different from said first plasma processing chamber and then reassembling them inside the chamber as taught by Wong (instead of performing an in situ coating step within the chamber as taught by Masuda) with a reasonable expectation of success, because both references teach performing a pre-coating process on apparatus parts that have surfaces exposed to plasma during processing to prevent corrosion.

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In addition, the references fail to teach the newly added limitation of “the material being dissociated ... from dummy wafers”. Wirz discloses a method for controlling the reactive deposit by using magnetron cathodes in which a target material is placed a plasma sputtering area (col.1 lines 11-22). One skilled in the art would realize that the deposited material could be from any conventional source including a target as taught by Wirz. It is the examiner’s position that the claimed dummy wafers is being used as targets in a plasma sputtering process and hence, would have been obvious to utilize a target material in the process of Masuda/Williams/Wong with the expectation of obtaining similar results.

Regarding Claim 2, Wong inherently teaches the method wherein the obtaining includes obtaining a component from one of a component manufacturer and plasma processing chamber manufacturer, as all such components must come from such a manufacturer.

Regarding Claim 5, Masuda in view of Williams and Wong does not explicitly teach the method wherein the second plasma processing chamber used to coat the component is similar to the first plasma processing chamber where the substrate is disposed. However, as discussed, Wong teaches that corrosion-resistant coatings on the surfaces of plasma apparatus parts exposed to plasma need not be applied in situ, and may, in fact, be successfully applied in a different apparatus. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the method taught by Masuda in view of Williams and Wong by performing the pre-coating method taught by Masuda, Williams, and Wong on apparatus parts in a different chamber similar to the first chamber (e.g., either of the chambers taught by Masuda or Williams) and then disposing of and reassembling them back in the original chamber before substrate processing as taught by Wong with a reasonable expectation of

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success, because both Masuda and Williams teach the use of apparatuses that may be used to plasma coat substrates.

Regarding Claims 6 – 8, Masuda inherently teaches the method wherein the film material, film thickness, and film uniformity are determined by a customer specification, as the film deposited must necessarily be of a specification desired by the customer or user.

Regarding Claim 9, Williams teaches that the silica film has a thickness of 0.2 – 2 microns (see Column 4, lines 49 – 51 of Williams).

Regarding Claim 11, Masuda teaches the method, further comprising pumping excess gas through a pump opening arranged in the plasma processing chamber (see Paragraph [0057]).

**Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda in view of Williams and Wong and Wirz, and further in view of Shan et al (5,605,637).**

Masuda in view of Williams and Wong does not teach the method wherein: the obtaining includes obtaining a pumping deposition shield that has been coated with a film of material; and the component disposing includes disposing said pumping deposition shield in the pump opening. As discussed, Masuda in view of Williams and Wong and Wirz teaches that it is advantageous to apply a pre-coating to components and surfaces of the plasma processing apparatus which come into contact with the plasma during processing using a target. Masuda in view of Wong further teaches that it is possible to coat the individual components in a separate processing chamber before reinstalling them back in the chamber to used for substrate processing instead of performing an in site chamber pre-coating process. Shan teaches, in Column 2, lines 27 – 38, that it is advantageous to use a pumping deposition shield “to prevent the plasma from

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reaching a portion of the reactor chamber.” Shan further teaches, in Column 6, lines 14 – 22, that “the invention provides a simple yet highly effective technique for reducing dc bias in a plasma etch reactor to a predicted lower level than would be obtained without use of the invention. Thus, higher etch rates can be maintained without the wafer damage and other processing difficulties that ensue from use of a dc bias that is too high.” It would have been obvious to one having ordinary skill in the art to have modified the method taught by Masuda in view of Wong by including a pump deposition shield in the plasma processing apparatus to have obtained the advantages taught by Williams. Furthermore, because one surface of the pumping deposition shield is in fluid contact with the plasma (see Figure 1 of Wong), and the pumping deposition shield functions to prevent plasma from entering the outlet ports for evacuating gases from the chamber, it would have been obvious to one having ordinary skill in the art to have coated the pumping deposition shield taught by Williams with a film of material as taught by Masuda and Wong to have obtained the advantages disclosed by Masuda and Wong, i.e. to prevent corrosion of the pumping deposition shield.

### ***Response to Arguments***

Applicant's arguments filed 1/29/09 have been fully considered but they are not persuasive.

Applicant first argues that Masuda, Williams, and Wong fail to teach the material being dissociated from dummy substrates (p.10 third paragraph).

The examiner agrees and hence, the new grounds of rejection has been provided.

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Applicant next argues that Masuda is silent on preseasoning either in the second plasma chamber or the first plasma chamber (p.10 last paragraph).

The examiner agrees in part. It is first noted that nowhere in independent claim 1 is there any mention of preseasoning. Hence, the applicant's arguments are not commensurate in scope with the instant claims. Regardless, Masuda specifically teaches that preventing the etching characteristic by controlling temperature and the deposition of reaction products (0016) in which a strong polymerized film can be formed on the inner wall of the processing chamber (0020). It is the examiner's position that this is a pre-seasoning step.

Applicant next argues that Williams fails to teach keeping the processing system out of substrate production until after the preseasoning step is completed (p.11 first full paragraph).

The examiner agrees in part. It is first noted that nowhere in independent claim 1 is there any mention of preseasoning or keeping the processing system out of substrate production. Hence, the applicant's arguments are not commensurate in scope with the instant claims. Regardless, Williams was cited to show the conventionality of utilizing a preseasoning step prior to the processing of substrates (col.3 lines 64-67).

Applicant next argues that Wong fails to teach a second plasma processing system to pre-season the component (p.12).

The examiner agrees in part. It is first noted that nowhere in independent claim 1 is there any mention of preseasoning. Hence, the applicant's arguments are not commensurate in scope with the instant claims. Regardless, Wong was cited to show the conventionality of utilizing a separate plasma chamber prior to coating (col.5 and Figure 1).

Applicant's arguments have been considered but are not deemed persuasive.



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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bret Chen whose telephone number is (571)272-1417. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bret Chen/

Primary Examiner, Art Unit 1792

4/21/09